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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,990

02/21/2006

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39712

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52054 7590 03/12/2007  
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EXAMINER

KERNS, KEVIN P

ART UNIT

PAPER NUMBER

1725

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/568,990

Applicant(s)

OYAMA ET AL.

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006 and 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/21/06.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

In this instance, the examiner cannot consider JP 50-26344 and JP 59-77578 since the applicants have provided no copies of these references, and the search report (which is in the Japanese language), does not include reference "kind codes" (A, A1, B, U etc.). The above references (when using the kind code A) do not uncover

corresponding references that would be pertinent to this application. On the other hand, JP 8-99182 A (which was not provided by the applicants) has been provided by the examiner in the PTO-892. As a result, the applicants are suggested to provide copies of these two references (which are "crossed-through" in the IDS of February 21, 2006) in their response to this Office Action.

### ***Drawings***

2. Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, the phrase "according to the invention" in the 5th line of the abstract should be deleted, as it is a phrase that can be implied.

4. The disclosure is objected to because of the following informalities: in paragraph [0005], 3rd line, replace "5" with "105" after "semiconductor". In paragraph [0016], 2<sup>nd</sup> line from the top of page 5, replace "8" with "10a" after "opening". In paragraph [0029], 2<sup>nd</sup> line, replace "9" with "2" after "box body". The entire paragraph [0035] (BRIEF DESCRIPTION OF THE DRAWINGS) should be deleted, as similar text was added in the preliminary amendment (see Page 5 of 12). Appropriate correction is required.

### ***Claim Objections***

5. Claims 11-13 are objected to because of the following informalities: in claim 11, 3rd line, replace "include" with "includes". In claims 12 and 13, last lines, replace "portions" with "portion". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding independent claim 1, the phrase "or the like" (in this instance, the term "type") renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like", or "type"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). The limitation "tunnel-type shape" (claim 1) includes this indefinite term. In terms of relative shapes, what defines a "tunnel-type shape"? Furthermore, MPEP 2173.05(b), under heading E. "Type" (MPEP page 2100-216 of August 2006, Revision 5) states "*The addition of the word "type" to an otherwise definite expression...extends the scope of the expression so as to render it indefinite*". *Ex parte Copenhaver*, 109 USPQ 188 (Bd. App. 1955). In this instance, it is suggested to delete the term "type" and/or to revise appropriately.

Claims 1, 4, 6, 7, 9, and 13 recite the limitation "the air". There is insufficient antecedent basis for this limitation in the claims. In this instance, it is suggested to delete the term "the".

With regard to claim 1, the limitation "the outside" is indefinite, as there is no specific structure in reference to what the phrase "the outside" would apply. In this instance, it is suggested to include one or more structural features as reference point(s).

Claims 3 and 4 recite the limitation "the two side end portions". There is insufficient antecedent basis for this limitation in the claims.

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Claim 4 recites the limitation "the inside surface". There is insufficient antecedent basis for this limitation in the claim. In addition, this limitation is indefinite, as the two openings formed in the two side end portions would also appear to face an "outside surface" of the box body as well. In other words, how do the two openings only face the "inside surface" of the box body?

Claims 5 and 10 recite the limitation "the outer peripheral portion". There is insufficient antecedent basis for this limitation in the claims.

With regard to claim 11, the limitation "the heat radiating unit include(s) two or more rows of cavity portions" is indefinite, as it appears as though the "box body" (not the "heat radiating unit") would only have "two or more rows of cavity portions", as shown by reference number "3" in Figures 2 and 3 of the application.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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9. Claims 1-10 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sigl (US 5,642,260).

Sigl discloses an arc welding power supply housing, in which the housing of the arc welding supply apparatus 10 includes a plurality of heat radiating electrical components; front and back panels (12,14), a base 16, and a top cover 18; a pair of side walls (26,28) and top panel 30 forming a cooling wind tunnel (box body) in which a heat radiating unit (first electrical element in the form of a power module heat sink 42, which has heat radiating fins internal to the box body, in a portion of an outer peripheral portion that defines a cavity portion) is enclosed, with the heat radiating unit 42 defining rows of cavities and having a tunnel shape and a substantially cuboid shape (beneath the top panel 30 that forms an outer peripheral portion that further defines a cavity portion for air flow therethrough); a fan 23 mounted adjacent an opening (air flow hole portion) of the heat radiating unit 42 while being aligned with two "inside-facing" openings (louvres 20,22) arranged in the two front and back panels (12,14), or side panels, all of which combine to be operable for allowing air to flow therethrough; and a plurality of other (e.g. second, third etc.) electrical elements that generate heat adjacent the outer peripheral portion defining the cavity portion, including a rectifier (inclusive of a rectify diode 25) heat sink 34, transformer 32, inductor 38, stabilizer 42, and plural reactors in the form of coils, windings, or conductors of small resistance (column 2, lines 64-67), which are all disposed within the wind tunnel (abstract; column 1, lines 5-44; column 2, lines 14-67; column 3, lines 1-10; and Figures 1-6).



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10. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Schneider (US 6,888,099).

Schneider discloses a wind tunnel for an arc welding power supply housing, in which the arc welding supply housing 12 includes a plurality of heat radiating electrical components; front and rear panels (16,18), a base panel 19, and a top cover 14; a U-shaped panel 50 (second chamber interior to the housing 12 of Figures 2, 3, 6, and 7) that includes side panels (56,58), a top panel 54, and side openings (64,66), thus forming a cooling wind tunnel 52 (box body) in which a heat radiating unit (first electrical element in the form of a heat sink assembly 48, which has heat radiating fins (108,110) internal to the box body (wind tunnel 52), in a portion of an outer peripheral portion that defines a cavity portion) is enclosed, with the heat sink assembly 48 defining rows of cavities and having a tunnel shape and a substantially cuboid shape (enclosed by the top panel 54 and side panels (56,58) that form an outer peripheral portion that further defines a cavity portion for air flow therethrough); a fan 124 mounted adjacent an opening (air flow hole portion) of the heat sink assembly 48 while being aligned with two "inside-facing" openings (louvres 20 on the cooling inlet 22 and cooling exit 24 of the housing 12) arranged in the two front and rear panels (16,18), or side panels, all of which combine to be operable for allowing air to flow therethrough; and a plurality of other (e.g. second, third etc.) electrical elements 90 that generate heat adjacent the outer peripheral portion defining the cavity portion (abstract; column 1, lines 6-8 and 28-54; column 2, lines 39-67; column 3, lines 1-35 and 64-67; column 4, line 1 through column 8, line 3; and Figures 1-7).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Sigl (US 5,642,260) or Schneider (US 6,888,099) in view of JP 8-99182 (complete translation of the Japanese document provided with this Office Action).

Sigl and Schneider individually disclose the elements of independent claim 1. Neither Sigl nor Schneider specifically discloses the use of two or more rows of cavity portions, including respective (plural) fans, as well as an inverter circuit arranged in the arc welding control unit.

However, JP 8-99182 discloses an inverter-type welding power source unit, in which the inverter welding power source includes a housing (unit box body 12) that encloses an inverter circuit 62, a plurality of heat-generating electrical elements, and a box body 72 divided into two rows of cavity portions, each cavity portion of which includes a respective fan 74 for providing an air stream flow through the respective cavities, such that these features are advantageous for eliminating interference between the welding power source unit and the surrounding environment, thus improving the reliability and performance of the inverter welding power source unit (abstract; paragraphs [0007]-[0047] of translation; and Figures 3-6).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify either of the arc welding power supply housings with wind tunnels, as disclosed individually by Sigl and Schneider, by using the inverter welding power source unit that includes an inverter circuit and two rows of cavity portions, including respective fans, as taught by JP 8-99182, in order to eliminate interference between the welding power source unit and the surrounding environment, thus improving the reliability and performance of the inverter welding power source unit (JP 8-99182; abstract; and paragraphs [0007], [0008], and [0047] of translation).

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Ahtner, Spear, and JP 2-142305 references are also cited in PTO-892.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 3/8/07*  
Primary Examiner  
Art Unit 1725

*KPK*  
kpk

March 8, 2007